



Dolphin MXP924 PXIe System Switch Firmware Release Note

30th November 2023

Version 1.2

Table of Contents

1	Introduction	3
1.1	Supported topologies.....	3
1.2	BMC Firmware versions.....	3
1.3	PFX FLASH Versions.....	3
2	Appendix	5
2.1	How to determine the Firmware versions	5
2.1.1	Linux platforms	5
2.1.2	Windows platforms.....	5
2.1.3	Example output.....	5
2.2	How to upgrade the firmware.....	6
2.2.1	Linux platforms	6
2.2.2	Windows platforms.....	6
2.3	How to contact Dolphin Support.....	6

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1 Introduction

This release note covers the MXP924 PCIe System Switch firmware. The firmware consists of Microchip PFX runtime executables and configuration data and Board Management Controller firmware (BMC config). This release note contains a summary of the changes made. Please contact Dolphin for details.

1.1 Supported topologies

The latest released firmware supports the following transparent configurations

Cable Configuration:

- Single x4 / x8 / x16 Upstream
- Single x4 / x8 Upstream, Single x4 / x8 Downstream

Backplane Configuration:

PCIe Gen3 x16 + x8

1.2 BMC Firmware versions

The Firmware version covers the MXP924 BMC firmware changelog.

Firmware version	Release date	Note
1	September 24 th 2020	Initial firmware release.
1.4	February 25 th 2021	<ul style="list-style-type: none">• Adds Board Firmware Recovery support.• Adds firmware version reporting.• Add support for AOC temperature reporting.
1.5	March 9 th 2021	<ul style="list-style-type: none">• BMC stability improvement
2.0	June 24 th 2021	<ul style="list-style-type: none">• Added support for PCI-SIG CMI sideband support, including reset and wake Signals.• Added longer delay before releasing PFX from reset after power on in order to allow clocks to stabilize.• Fixed link status issues with MR2 PFX firmware.• Added MXP924-BB base board
2.1	Oct 2021	<ul style="list-style-type: none">• Added safety mechanism to trigger board shutdown on overtemperature.• New and improved Gen3 LED blinking pattern.• Added support for MXP924-CC
2.4	December 16 th 2021	<ul style="list-style-type: none">• Added support for DIP-switch to enable WAKE and PowerON. Off by default• Bundled with eXpressWare 5.19.2

1.3 PFX FLASH Versions

The PFX FLASH version changelog. Please note that the Dolphin software tools report the PFX FLASH version as the EEPROM version.

FLASH version	Release date	Note
1	January 24 th 2021	Initial firmware version.
2	March 15 th 2021	<ul style="list-style-type: none">• Applied Microchip MR2, 3.70.0.4f• Disabled prefetch for management BAR0• Updated patch tables
3	May 18 th 2021	<ul style="list-style-type: none">• Updated port assignment.
4	May 20 th 2021	<ul style="list-style-type: none">• Updated patch tables.
5	August 16 th 2021	<ul style="list-style-type: none">• Multiconfig cleanup.

6	October 6 th 2021	<ul style="list-style-type: none">• Added config #1 to multi-config:<ul style="list-style-type: none">• Port 1-2: x8 UPS on the cable port• Port 3-4: x8 DSP on the cable port Bundled with eXpressWare 5.19.2
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2 Appendix

2.1 How to determine the Firmware versions

The version of the firmware components can be retrieved using the `dis_diag` tool. Please see options using `-h` option. This tool is available by installing eXpressWare Board Management Software 5.19.2 or newer. The software is available for both Windows and Linux and can be downloaded from www.dolphinics.com/mx.

2.1.1 Linux platforms

```
# cd /opt/DIS/sbin
# ./dis_diag
```

2.1.2 Windows platforms

```
> cd %ProgramFiles%\Dolphin Express MX\Util
> .\dis_diag
```

2.1.3 Example output

```
# dis_diag
```

```
=====
Dolphin diagnostic tool -- dis_diag version 5.19.0 (Mon Oct 12 16:44:17 CET 2021)
=====
```

```
Adapter 1 > Type                : MXP924
           Mode                  : TRANSPARENT
           NodeId                 : 4
           Serial number          : MXP924-CC-000048
           MXH chip family        : MICROSEMI - PFX GEN4
           MXH chip vendorId      : 0x11f8
           MXH chip device        : 0x4052
           MXH chip revision      : ZB
           EEPROM version        : 06
           EEPROM vendor info     : 0x0000
           Firmware version    : 2.4
           Card revision          : CC
           Topology type          : Not determined
           Topology Autodetect    : No
           Number of enabled links : 2
           Max payload size (MPS) : 128
           Multicast group size   : 2 MB
           Multicast groups       : 4
           Clock mode slot        : Port
           Clock mode link        : Global
           BDF                     : 03:00.0
           PCIe slot hwport       : P 8
           PCIe slot state        : x4, Gen4 (16 GT/s)
           PCIe slot capabilities  : x4, Gen3 (8 GT/s)
```

2.2 How to upgrade the firmware

The firmware can be upgraded using the upgrade_eeprom utility bundled with eXpressWare version 5.18 or newer.

2.2.1 Linux platforms

```
# cd /opt/DIS/sbin
# ./upgrade_eeprom.sh --upgrade
```

2.2.2 Windows platforms

Start PowerShell with administrative capabilities (Press Windows+X, select Windows PowerShell (Admin))

```
PS > cd "${env:ProgramFiles}\Dolphin Express MX\Util"
PS > Set-ExecutionPolicy AllSigned -Scope Process
PS > .\upgrade_eeprom.ps1 --upgrade
```

Please carefully review the output from the upgrade utility.

A complete power cycle of the system (including removal of AuxPower) is required. Please verify the firmware upgrade was successful after system is powered on again following the steps found in section 2.1 How to determine the Firmware version above.

2.3 How to contact Dolphin Support

For general support questions, please contact Dolphin via the Jira Service Management portal: <https://www.dolphinics.com/csp>.